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United States Department of Agriculture,

OFFICE OF THE SECRETARY.—Circular No. 16.

TESTS OF COMMERCIAL CULTURES OF NITROGEN-FIXING BACTERIA.

The extravagant and misleading claims contained in some of the advertising matter now appearing in regard to inoculating material for legumes make it necessary again to call attention to the limitations of the value of inoculation. Summarized from our bulletins, they may be stated as follows:

No beneficial results can be expected for a particular crop if the bacteria for that crop are already present in the soil.

But little, if any, benefit can be expected from the use of these bacteria if the ground is decidedly in need of other fertilizers, such as phosphates, potash, or lime.

But little, if any, benefit can be expected from inoculation if the soil is already rich in nitrogen.

A recent examination of samples of cultures for inoculating legumes obtained through various seed firms throughout the United States indicates that there has been a slight improvement in the general character of these cultures. The results of the tests are shown in the following table:

Results of tests of samples of cultures of nitrogen-fixing bacteria obtained in the open market.

Manufacturer.	Legume.	Condition of culture.	Remarks.
Griffith & Turner, Baltimore, Md.	Alfalfa	Poor	Badly contaminated.
Do.	do	Worthless	Almost sterile; a few colonies of foreign bacteria present.
Do.	Garden pea	Fair	Some foreign bacteria and molds present.
Do.	Red clover	Worthless	Foreign bacteria and molds present.
Do.	Vetch	do	Do.
National Nitro-Culture Co., West Chester, Pa.	Alfalfa	Good	Contaminated with yeasts and molds.
Do.	do	Very good	Slightly contaminated.
Do.	do	Worthless	Foreign bacteria and yeasts present.
Do.	do	Good	Yeasts present.
Do.	do	Worthless	Foreign bacteria, molds, and yeasts present.
Do.	Bean	Fair	Rather slow in developing; contaminated.
Do.	do	Good	Some foreign bacteria and yeasts present.
Do.	Garden pea	do	Many yeasts also present.
Do.	do	Poor	Badly contaminated.
Do.	do	Fair	Contaminated.
Do.	do	Worthless	Foreign bacteria, yeasts, and molds present.
Do.	do	do	Do.
Do.	do	do	Do.
N. L. Willet Seed Co., Augusta, Ga.	Alfalfa	do	Do.
Do.	Garden pea	Good	Some foreign bacteria and a few yeasts present.

Respectfully submitted.

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Approved:

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